USSR

BABICH, B. N., et al, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 36-40

However, higher deformation ratios (83%) suppress the formation of large recrystallized grains. (3 illustrations, 2 tables, 11 bibliographic references).

Superalloys

USSR UDC 539.4

BUNTUSHKIN, V. P., and BABICH, B. N., Moscow, All-Union Scientific Research Institute of Aviation Materials

"Peculiarities of the Temperature Dependence of the Microhardness of a Highly Heat-Resistant Dispersion-Hardened Nickel Alloy"

Kiev, Problemy Prochnosti, No 5, May 73, pp 108-110

Abstract: Results are presented of the investigation of the temperature dependence of microhardness of dispersion-hardened VDU-1 nickel alloy (Ni+2.5%ThO_2), in comparison with pure Ni (99.96%) and complex alloyed aging alloys EP-109 (KhN56VMKYu) and EP-220 (KhN51VMTYuKFR) in the 20-1200°C temperature interval. A linear dependence was established of the logarithm of microhardness on the temperature, with discontinuities of the curves at 250-300°C for the VDU-1 alloy and pure Ni and at 900-950°C for the aging alloys, the origination of the discontinuities being bound with the start of the recrystallization process. The dropping rate of hardness with rising temperature (inclination of straight lines lgH-t) characterizes the rate of diffusion processes and the thermal stability of the material. One figure, two tables, five bibliographic references. 1/1

USSR

UDC 621.762:541.121.124

MEYERSON, G. A., BABICH, B. N., and KOZYREV, A. S., Moscow Institute of Steel and Alloys, Chair of Rare and Radioactive Metals and Powder Metallurgy

"Investigation of the Reduction Process of Chromium Oxide by Hydrogen in the Presence of Powdered Nickel"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 5, 1972, pp 83-88

Abstract: The analysis of thermodynamic and kinetic reduction conditions of finely dispersed chromium oxide by hydrogen in the presence of powdered nickel shows that in the region of γ-solid solutions the logarithm of the equilibrium constant drops linearly with increasing logarithm of chromium concentration. A precipitated mix of oxides which additionally contained 2.5% ThO_2 was used in studying the reduction kinetics in the 1100-1250°C temperature interval. Almost complete elimination of oxygen takes place after 7 and 4 hours at 1200 and 1250°C, respectively. In the initial reduction stage, the kinetics of the process are limited by the rate of chromium oxide interaction with hydrogen. With developing reaction and increasing chromium concentration in the resulting solid solution, the process of diffusion dissolution of chromium in nickel becomes limiting. The

1/2

USSR

MEYERSON, G. A., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 5, 1972, pp 83-88

activation energies of chemical interaction and heterodiffusion are 32 and 74 kcal/mol, respectively. The method for hydrogen reduction of chromium oxide is unsuitable for powders of dispersion hardened Ni-Cr alloys, owing to enlargement of hardening inclusions at temperatures required for complete reduction. Four figures, one table, eighteen bibliographic references.

2/2

USSR

UDC 669.24:539.37

BABICH, B. N., BERNSHTEYN, M. L., PORTNOY, K. I., PROKOSHKINA, V. G., and FEL'GINA, S. B., Moscow

"Effect of Cold Rolling and Subsequent Heating on the Structure and Properties of Dispersion-Hardened Nickel"

Moscow, Akademiya Nauk SSSR. Izvestiya. Metally, No 6, Nov-Dec 72, pp 144-148

Abstract: A study is made of the effect of cold rolling with a 60% reduction in area and subsequent heating on the structure, texture, and hardness of dispersion-hardened nickel containing 3 vol. % HfO_2 and obtained under different conditions of hot extrusion. The cold plastic deformation by means of rolling intensifies during reheating recrystallization of dispersion-hardened nickel as opposed to rotation forging. The obtained recrystallized structure with large elongated grains (2-3 mm) is characterized by the presence of annealing twins, developed substructure, and texture that retains mainly the orientations of the structure of deformation. In order to obtain a maximum degree of hardening of dispersion-hardened alloy, it is feasible to utilize a combined deformation during thermomechanical treatment which provides for combining of deformation rolling and rotation forging.

1/1

USSR UDC 669.295/145.2

BABICH, D. D., SOROKIN, I. P., SHAPOVALOVA, O. M., and GLUSHCHENKO, Zh. N.

"Effect of the Medium on the Degree of Pulverization and the Quality of Electrolytic Titanium Powders"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 62-71

Translation: Results of research to study the effect of conditions for pulverizing the cathode deposit in a ball mill in different media on the fractional composition and quality of electrolytic titanium are described. Pulverizing the cathode deposit was done under the following conditions: in a medium of electrolyte under argon; in water after leaching in 2% HCl; in the process of leaching in 2% hydrochloric acid; and in a medium of potassium chloride and sodium. As a result of the research, it is established that the most effective pulverization is observed where the cathode deposit is leached directly in a ball mill in 2% HCl. However, with this method the compactability of the powder is somewhat worsened. With pulverization in the other media, compactability does not change. The powder was subjected to X-ray and microscopic study. Four illustrations, three tables, and one bibliographic entry.

1/1

USSR

UDC 669.295-145.2

SOROKIN, I. P., SABICH, D. D., KUDRICHENKO, S. A., GLUSHCHENKO, Zh. N., and KOYGUSHSKIY, N. N.

"On the Nature of Chlorine Contained in Electrolytic Titanium"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 72-77

Translation: Data are given on the effect of hydroprocessing conditions and nature of the solvent on the content of deposited chlorine in electrolytic titanium. A description is given of the results of research on the influence of gorups of tetravalent titanium, contained in working solutions, on the content of surface and overall chlorine in metal. Statistical data on the content of chlorine in electrolytic titanium are considered. It is demonstrated that deposited chlorine in electrolytic titanium after hydroprocessing of cathode deposits in 1% HCl is not a product of hydrolysis of titanium chlorides. Five tables and two bibliographical entries.

1/1

USSR

UDC 621.762.2

BABICH, D. D., SOROKIN, I. P., SHAPOVALOVA, O. M., and GLUCHCHENKO, ZH. N.

"Influence of the Medium on the Degree of Fractionation and Quality of Electrolytic Titanium Powders"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected Works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, pp. 62-71, (Translated from Referativnyy Zhurnal—Metallurgiya, No. 1, 1971, Abstract No.1 G457 by the authors).

Translation: Results are described from studies of the influence of grinding conditions of cathode precipitate in a ball mill in various media on the fractional composition and quality of electrolytic Ti. Grinding of the cathode precipitate was performed under the following conditions: in a medium of electrolyte under Ar in water after leaching in 1% HCl, in the process of leaching in 1% HCl and in a medium of KCl plus NaCl. The optimal grinding effect is observed during leaching of the cathode precipitate directly in the ball mill in 1% HCl. However, this decreases the pressability of the powder somewhat. Pressability is not changed by grinding in the other media. The powder was studied by X-ray diffraction and microscope. 4 figures; 3 tables.

1/1

USSR

UDC 539.214;539.374

BABICH, E. A., ZAYTSEV, G. Z.

"Analysis of Plastic Deformation Zones Under the Impression of Large Spheres Into Massive Plates"

V sb. Issled. i kontrol' mekhanich. svoystv materialov nerazrushayushch. metodami (Studies and the Control of Mechanical Properties of Materials by Nondestructive Methods -- Collection of Works), Volgograd, 1972, pp 30-34 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V479)

Translation: The rational parameters for the strengthening and dimensions of an instrument for the cold hardening of large-scale stamped plates of a powerful hydraulic press are calculated. It is established that the diameter of the sphere to strengthen a plate of thickness 500 mm can be taken as 100 mm to obtain the required depth of impression and the required degree of impression. The analytical relationship between the depth of impression and the diameter of the sphere as established from processing experimental data shows the essential possibility of obtaining a depth of impression of several tens of millimeters and a correspondingly powerful field of residual compressive stresses. This is of importance in reducing the residual deformation of stamping plates of hydraulic presses.

1/1

1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--A LASER SHOT -U-

AUTHOR--BABICH, I.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA GAZETA, JULY 17, 1970, P 4, COLS 4-6

DATE PUBLISHED--17JUL70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, MEDICAL RESEARCH FACILITY, LASER RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1261 STEP NO--UR/9034/70/000/000/0004/0004

CIRC ACCESSION NO--AN0118310

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AN0118310

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KIYEV SCIENTIFIC RESEARCH INSTITUTE OF EXPERIMENTAL AND CLINICAL ONCOLOGY HAS BEEN FOR SOME YEARS CONDUCTING RESEARCH INTO BIOLOGICAL AND ANTITUMOR EFFECTS OF LASER RADIATION. THE WORK, GUIDED BY R. YE. KAVETSKIY, DIRECTOR OF THE INSTITUTE, ACADEMICIAN OF THE UKRAINIAN ACADEMY OF SCIENCES, MERITORIOUS SCIENTIST OF THE UKSSR, WAS LAUNCHED SIMULTANEOUSLY IN SEVERAL LABORATORIES. THE ABOVE IS AN EXCERPT FROM A FILM SHOT BY I. MAKARENKO AT THE MICROPHOTO LABORATORY OF THE INSTITUTE, WHICH IS HEADED BY HIM. A PHOTOGRAPH OF DOCTOR YE. POLISHCHUK PERFORMING A LASER OPERATION IS GIVEN.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EFFECT OF ZIRCONIUM TANNING ON THE WELDING TEMPERATURE AND THE ACIDITY OF LEATHERS -U-

AUTHOR--BABICH, I.YA, SHAPILSKAYA, A.YA

B

COUNTRY OF INFO--USSR

SOURCE--KOZH., OBUV. PROM. 1970, 12(1) 26-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ZIRCONIUM COMPOUND, TANNING MATERIAL, LEATHER, CHROMIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0188 STEP NO--UR/0498/70/012/001/0026/0029

CIRC ACCESSION NO--AP0106844

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106844

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEATHER TANNED WITH NA SULFATE ZIRCONATE, USING 6PERCENT ZRO SUB2 BY THE WT. OF HIDES, AHD A "WELDING TEMP." (A MEASURE OF THE CHEM. AFFINITY OF THE TANNING AGENT TO COLLAGEN) HIGHER THAN THAT OF LEATHER FROM CHROME, SYNTAN, CHROME SYNTAN, OR CHROME VEGETABLE TANNING. THE HCL CAPACITY WAS DETD. ON ACETONE DRIED RAW HIDES AHD ON HIDES AFTER PROLONGED SOAKING IN AN INCREASING CONCN. OF TANNING AGENTS, ZR SALTS, OAK EXT., AND SYNTAN SPS. APPROX. THE SAME DECREASE OF ACID CAPACITY WITH INCREASING AMT. OF TANNING AGENT WAS OBTAINED IN ALL CASES, REACHING A VALUE OF 0.40 MEQUIV-G AT 35PERCENT ZRO SUB2 ON 1 G PROTEIN. LINKING OF PROTEIN STRUCTURE WITH ZR SALTS WAS SIMILAR TO THAT WITH VEGETABLE TANNING AGENTS, BEING ANIONIC IN CHARACTER, AND REACTION OCCURRRING THROUGH THE AMINO GROUPS OF COLLAGEN TO FORM BRIDGES BETWEEN ADJACENT PROTEIN CHAINS BY ELECTROVALENCE FORCES, WHICH LATE CHANGED TO H BONDS.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--APPLICABILITY OF THE TWO DIMENSIONAL APPLIED THEORIES TO THE PROBLEMS OF STABILITY UNDER AXIAL COMPRESSION OF CYLINDRICAL SHELLS MADE

AUTHOR-(04)-GUZ, A.N., BABICH, I.YU., PELEKH, B.L., TETERS, G.A.

COUNTRY OF INFO--USSR

B

SOURCE--MEKHANIKA POLIMEROV, VOL. 6, JAN.-FEB. 1970, P. 141-143

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SHELL STRUCTURE STABILITY, PLASTIC MECHANICAL PROPERTY, ELASTICITY THEORY, SHEAR STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1944 STEP NO--UR/0374/70/006/000/0141/0143

CIRC ACCESSION NO--AP0108273

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE APPLICABILITY OF THE TWO DIMENSIONAL, KIRCHHOFF LOVE APPLIED THEORIES OF THE TIMOSHENKO AND AMBARTSUMIAN TYPE, TO THE STABILITY PROBLEMS OF SHELLS WITH A LOW SHEAR RIGIDITY. CRITICAL STRESSES CALCULATED BY USING THESE THEORIES ARE COMPARED WITH RESULTS OBTAINED BY BABICH (1968) FOR STABILITY OF CYLINDRICAL SHELLS ON THE BASIS OF GENERALIZED SOLUTIONS OF THE THREE DIMENSIONAL, LINEARIZED SOLUTIONS OF THE ELASTICITY THEORY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230002-0"

USSR

UDC 517.948

BABICH, M. D.

"Evaluation of the Total Error With Minimization of the Quadratic Functional in a Sphere"

Ukrainskiy Matematicheskiy Zhurnal, Vol 22, No 3, 1970, pp 388-393

Abstract: A previously published work dealt with the evaluation of total error with the minimization of functionals, in the case of the presence of restrictions, by the method of gradient projection. In the present work an evaluation is made of total error with minimization of the quadratic functional in a sphere by the method of gradient projection. Since this example illustrates the theory set forth in the previously mentioned work, some of the results of that work are cited without proof.

1/1

USSR UDC 669.018.25

LISOVSKIY, A. F. and BABICH, M. M. (Deceased), Institute of Superhard Materials, Kiev

"Study of Cobalt Melt Redistribution in Cermet WC-Co Hard Alloys"

Kiev, Poroshkovaya metallurgiya, No 2, Feb 72, pp 53-58

Abstract: Welding or sintering superhard alloys in the presence of the liquid phase causes redistribution of cobalt over various sections of the article resulting in a variation of contents and particle sizes of tungsten carbide which, in turn affects the physical, mechanical, and service properties of the article. The characteristics of specimens of VK15-VK6, VK15-VK11B, VK15-VK2, VK10M-VK6, VK10M-VK8, VK10M-VK8B, and VK6B-VK6M superhard alloys before and after heat treating are shown in a table. The liquid phase content was determined at 1390°C. Derived were relationships for the liquid phase equilibrium enabling determination of the direction of liquid phase migration in the alloys, evaluation of Co contents following redistribution, as well as appropriate selection of alloys to satisfy the equation for the mechanical equilibrium of the liquid phase and preclude Co redistribution. (1 illustration, 1 table, 9 bibliographic references).

1/1

USSR UDC: 531.782

KUPKO, V. S., BABICH, V. I.

"Experimental Study of Strip Force and Pressure Measurers"

Ukr. Resp. Nauch.-Tekhn. Konf., Posvyashch. 50-Letiyu Metrol. Sluzhby USSR, 1972 [Ukrainian Republic Scientific and Technical Conference Dedicated to the 50th Anniversity of the UkSSR Metrology Service, 1972 -- Collection of Works], Khar'kov, 1972, p 223 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 3, 1973, Abstract No 3.32.333)

Translation: The Khar'kov State Scientific Research Institute for Metrology has developed strip force and pressure measurers, in which the shape of the elastic element and cutting of the strip (S) from a single piece have allowed production of measuring devices stable over a broad range of loads. Results are presented from experimental study of strip measurers, and the dependence of frequency of the strip generator on surrounding medium temperature, conditions of attachment of the dynamometer and generator power supply voltage is studied. The experiments establish the following: 1. The temperature coefficient of the strip sensor changes with S tension: in the free state of the S, it is $2.6 \cdot 10^{-4}$, in the tight state --

1/2

USSR

Kupko, V. S., Babich, V. I., Ukr. Resp. Nauch.-Tekhn. Konf., Posvyashch. 50-Letiyu Metrol. Sluzhby USSR, 1972, Khar'kov, 1972, p 223.

$1.3 \cdot 10^{-5}$, which agrees with theoretical calculations. 2. The maximum error when various types of clamps are used is 0.2%, whereas a "Cardan" type clamp does not cause an error of over 0.05%. A reduction in the error caused by clamping of the sensor can be achieved by using a rigid elastic element and a "Cardan" type clamp. When the supply voltage changes by ±20%, the natural oscillating frequency of the generator changes by 0.06%, allowing operations without a stabilized power supply.

2/2

USSR

UDC 621.785.797

BABICH, V. K., GUL', Yu. P., and DOLZHENKOV, I. Ye.

Deformatsionnoye Stareniye Stali (Strain Aging of Steel), Moscow, Metallurgiya, 1972, 320 pp

Translation of Annotation: The features of strain aging of steel and thermally hardened rolled products of different designation are presented which in many cases predetermine the quality and reliability of such materials in operation. At the present time strain aging is used as a hardening thermomechanical treatment method for improving mechanical properties. Available information on aging and the latest achievements in this field are reported.

This book is intended for personnel of scientific research institutes and plant laboratories, technicians working in the fields of heat treatment and plastic deformation, and specialists in physical metallurgy. It may also be useful to teachers, undergraduates, and graduate students at metallurgical, machinebuilding, and polytechnical schools of higher education. 114 illustrations, 9 tables, 536 bibliographic references.

Table of Contents:

USSR

BARICH, V. K., et al., Deformatsionnoye Stareniye Stali (Strain Aging of Steel), Moscow, Metallurgiya, 1972, 320 pp

2/2

USSR UDC 621.771.261

SICHEVOY, A. P., BABICH, V. K., BREZHNEV, L. A., PIROGOV, V. A., and OSIPOVICH, S. V.,

"Changes in the Properties of 45G Steel After Rolling on the Three-Roller 120 Mill"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 6, Nov-Dec 70, p 38

Abstract: Properties of the 45G steel after heating, rolling and subsequent cooling under various conditions were investigated. Billets 115 mm in diameter and 600 mm long were heated at various heating rates up to 1150-1200° by the induction method, then subjected to shrinkage by rolling. The study of the macrostructure showed that sulfur and phosphorus distribution along the billet cross section was satisfactory, and the magnitude of general and central porosity did not exceed 2 points. Mechanical properties of the billets had not changed rolling and cooling under various conditions. It is concluded that low-carbon manganous steel in billets 115 mm in diameter can be rolled on three-roller transverse-spiral mills in accordance with the procedure used for carbon steels.
1/1

USSR

UDC 669.046.5

KUDRIN, V. A., YELANSKIY, G. N., BABICH, V. K., MOTOV, V. I., TYURIN, Ye. I., and DANILIN, V. I

"Technology of Quality Steelmaking in Basic Martin Furnaces Under Contemporary Conditions"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 66-73

Translation of Abstract: Results of investigations on the theoretical development and practical testing of a rational technology for conducting martin steelmaking under contemporary conditions are presented. 6 figures, 23 references.

1/1

USSR

UDC: 621.375.826

BABICH, V. M. and SOLOV'YEV, V. S.

"Studying the Interaction of the Competing Transitions of a He-Ne-Laser"

Tr. metrol. in-tov SSSR. Khar'kov NII metrol. (Works of the Metrology Institutes of the USSR. Khar'kov Scientific-Research Institute of Metrology), 1972, vyp.7, pp 27-32 (from RZh-32.Metrologiya i Izmeritel'naya Tekhnika, No 5, 1973, Abstract No 5.32.1205)

Translation: The authors study experimentally an He-Ne-laser at γ =0.63 with a wide-angle resonator which can serve as an emission source with a narrow line width and with sufficiently high stability. It is shown that the experimental line width exceeds the theoretical several times. This may be related to the presence of competing radiation at an adjacent transition $3S_2$-3_{p4} (λ =3.39μ) in the resonator of the laser.

1/1

USSR UDC 621.373.826

BABICH, V. M., LEYKIN, A. Ya., and SOLOV'YEV, V. S.

"Combined System of Intermode Beat Frequency Automatic Tuning System in a Laser With Synchronous Oscillations"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Electronics Engineering, Republic Interdepartmental Thematic Scientific-Technical Collection) No 21, 1972, pp 185-194 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D157)

Translation: A selective analysis is made of a method proposed earlier for stabilizing the length of the resonator in a multimode laser operating with longitudinal oscillation synchronism. The transient process of the automatic frequency adjustment system is discussed, and the analytic condition for stable combined operation of the two-resonance circuit system is found. The effect of frequency fluctuations of the intermode beat oscillations on the automatic tuning system is analyzed. Three illustrations, bibliography of two. Resume

USSR UDC 621.375.82

BABICH, V. M., LEYKIN, A. Ya., SOLOV'YEV, V. S.

"Combined System for the Automatic Tuning of the Frequency of Intermodal Beats of a Laser With Synchronized Oscillations"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radioengineering. Republic Interdepartmental Thematic Scientific-Technical Collection), 1972, No. 21, pp 185-194 (from RZh-Fizika, No 11, Nov 72, Abstract No 11D961)

Translation: Stabilization of the resonator length of a multimodal laser operating in the mode of synchronization of longitudinal oscillations is discussed. The transition process of an automatic frequency control system is discussed and the condition for stable concurrent operation of the two-loop system is found analytically. The effect of fluctuations in the frequency of intermodal beats on the operation of the automatic frequency system is analyzed. Authors abstract.

1/1

USSR UDC: 517.9:535.4

BABICH, V. M. and KRAVTSOVA, T. S.

"Propagation of Transverse Elastic Oscillations of the Type of a Wavy Film with Quantum Thickness"

Zap. nauchn. seminarov Leningr. otd. Mat. in-ta AN SSSR (Science Notes of Seminars of the Leningrad Division, Mathematics Institue of the Academy of Sciences, USSR) 1970, vol. 17, pp 25-37 (from RZh-Matematika, No. 3, March 71, Abstract No. 3S3C0)

Translation: An asymptotic expansion is obtained for the solution of the problem of oscillations in an elastic medium as $\omega \to \infty$ (ω is the frequency of the wave process) under the assumption that there exists a solution of the form $u = e^{-i\omega[t-\tau(x)]}\varphi(x)$, concentrated near some smooth surface S. The transverse elastic oscillations thus obtained are concentrated near the surface S in films of thickness $|\nu| \sim \omega^{-\frac{2}{3}}\sqrt{2n+1}$, $n = 0,1,\ldots$. V. Belov

1/1

USSR

UDC: 517.9:535.4

BABICH, V. M.

"Finding the Saddle Point in the Problem of an Ellipse"

Zap. nauchn. seminarov Leningr. otd. Mat. in-ta AN SSSR (Scientific Notes of Seminars in the Leningrad Division of the Institute of Mathematics, Academy of Sciences, USSR) 1970, vol. 17, pp 20-24 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B310)

Translation: A geometric proof is proposed for the result of B. Andronov (AZhMat, 1966, 9B366) for finding the saddle point in the integral

$$\int_C f(c)e^{ik\omega(\gamma)}d\gamma, \quad k \gg 1,$$

which gives the high-frequency asymptotic behavior of the Green function in the optical range. V. Belov

1/1

USSR UDC 621.314.61

BABICH, V. M., and BARKOVSKIY, B. S.

"Method for Experimental Determination of the Electrotechnical Factors of the Switching Effect on the Rectifiers of a Converter with an Investigation of the Electromagnetic Processes"

Nauch. tr. Omsk. in-t inzh. zh.-d. transp. (Scientific Works of the Omsk Institute of Railroad Transportation Engineers), 1970, 117, pp 11-21 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B421)

Translation: The paper discussed a method for determination of the electrotechnical factors of the switching effect for rectifiers during experimental investigations of converters for a-c electric locomotive and traction substations. The proposed method can be useful for experiments during investigation of processes in power converters. 3 ill. 1 tab.

1/1

AA0052699 BABICH-DEKAN E. T.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, /-70

241256 DIELECTRIC MATERIAL ABRASIVE MACHINING

is ensured with grains rotating in a magnetic field at a velocity of 1000m/sec. and chips removed by air blast. The magnetic levitation of abrasive grains 2 is provided by electromagnet 1, while the concentric electromagnet 3 limits the levitation and prevents grain escape from the field of magnet 1. The magnets are fed by generators 4 & 5, the alternating or pulsating current in magnet 1 forming the rotating field.

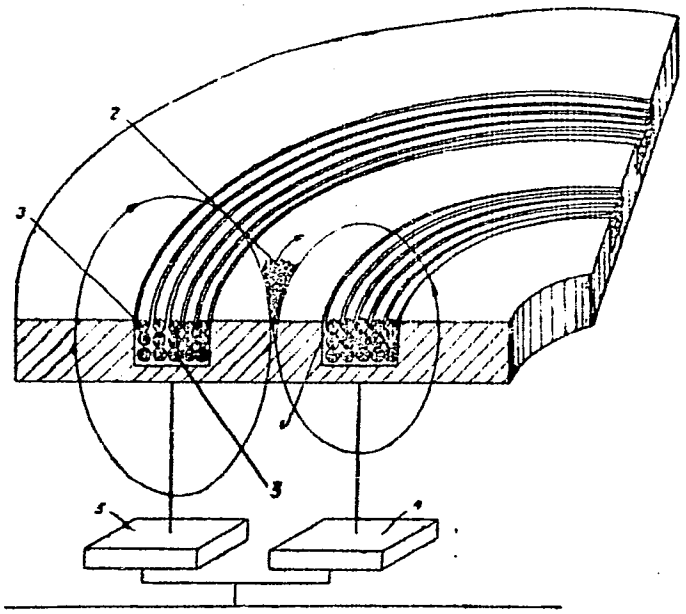
2.8.67. as 1178289/29-33, MANZHOS, F.M. et al. (18.8.69) Bul. 13/1.4.69. Class 67a, Int. Cl. B 24b.

Manzhos, F. M.; Soldatenok, V. V.; Mazur, V. F.; Babich-Dekan', F. T.

4

19821493

Acc. Nr.: AA0052699



3/2

REEL/FRAME
19821494

BABICHENKO, Ye. medicine

29 May 71 81 FTD-SCITT BCIENCE

11. USSR

"Riga Medical Institute"

Moscow, Meditsinskaya Gazeta, 26 Mar 71, p 3

O. Paris -- Candidate of Medical Sciences, head of the Department of Leukemia

1/1

12. USSR

"Gorkiy Medical Institute"

Moscow, Meditsinskaya Gazeta, 23 Mar 71, p 3

Prof Ye. Babichenko -- head of the Chair of Neurosurgery

1/1

Transformation and Structure

USSR

UDC 621.9.048.6

BABICHEV, A. P., and USTINOV, V. P., Institute of Agricultural Machinery, Rostov-on-Don

"Increasing the Wear Resistance of Steel by Superfinish Hardening Vibratory Tumbling"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 1, Jan-Feb 70, pp 13-15

Abstract: There are various methods for the finish hardening of machine parts (fine turning, grinding, diamond burnishing, shot peening). The effectiveness of these methods in increasing the support power, wear resistance, and life of parts has been established through numerous laboratory studies and has been proven by practical industrial application. Data are given on the wear of hardened 45 steel after vibratory tumbling with hardened steel balls, 9 mm in diameter. As the duration of tumbling is increased, the roughness peaks gradually flatten out and the cavities are filled in. Vibratory tumbling increases the microhardness of the surface layer 40 to 50 μ deep. The maximum of microhardness is attained after 120 min of tumbling. The treatment described appears to reduce the wear of specimens on rolling friction.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--RAISING THE WEAR RESISTANCE OF ,CARBON, STEEL BY VIBRATIONAL HARDENING TREATMENT -U-

AUTHOR-(02)-BABICHEV, A.P., USTINOV, V.P.

B

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (1), 13-15

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBON STEEL, WEAR RESISTANCE, VIBRATION EFFECT, SURFACE HARDENING. ABRASIVE/(U)ST45 CARBON STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1798 STEP NO--UR/0369/70/006/001/0013/0015

CIRC ACCESSION NO--AP0129166

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129166

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF VIBRATIONAL TREATMENT ON THE WEAR RESISTANCE OF QUENCHED C STEEL (ST. 45) WAS STUDIED. THE VIBRATIONAL TREATMENT WAS APPLIED TO THE C STEEL SAMPLES IN ABRASIVE MEDIA, CONSISTING, FOR EXAMPLE, OF HARDENED METALLIC SPHERES 9 MM IN DIA.; THIS HARDENED THE SURFACE LAYERS AND ELIMINATED INHOMOGENEITIES, THE MICROHARDNESS OF THE SURFACE LAYER INCREASING BY SIMILAR TO 50PERCENT. THE WEAR RESISTANCE UNDER CONDITIONS OF ROLLING AND SLIDING FRICTION ROSE SUBSTANTIALLY.

UNCLASSIFIED

USSR

UDC 669.715.018.95

BABICHEV, B. I., D'YACHENKO, L. A., ZOLOTOREVSKIY, YU. S., IVANOV, V. V., KUCHKIN, V. V.

"Possibility of Hardening Aluminum Alloys by VT15 Alloy"

V sb. Metallurgiya (Metallurgy -- collection of works), No 14, Sudostroyeniye Press, Leningrad, 1971, pp 128-132 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4I647)

Translation: A study was made of the possibilities of creating layered composite materials by reinforcing Al-alloys with high-strength materials. As an example a composite is presented in which the role of the hardening agent is played by VT15 alloy. The theoretical technological scheme and the heat treatment conditions for this composite material were selected so as to insure a strength >70 kg/mm^2 with a specific weight of 3.32 g/cm^3. The study of the physical and mechanical properties of this composite makes it possible to draw conclusions regarding its promising nature. 3 illustrations, 1 table, and a 6-entry bibliography.

1/1

USSR

BABICHEV, B. I., ZOLOTOREVSKIY, YU. S., ZORINA, A. YA., IVANOV, V. V.

"Properties of An Aluminum Alloy Strengthened With Fiberglass"

V sb. Metallurgiya (Metallurgy -- collection of works), No 14, Sudostroyeniye Press, Leningrad, 1971, pp 133-137 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4I648)

Translation: A study was made of the properties of an aluminum alloy strengthened with fiberglass. It is demonstrated that the theoretical data on the strength of a two-layer composite agree with the actual data. The variation in temperature from +142 to -180°, cyclic loading, and corrosive environment have no effect on the mechanical properties of the two-layer composite. 1 illustration, 2 tables, and a 3-entry bibliography.

1/1

USSR

UDC 669.71'721'5.018.9.4

BABICHEV, B. I., VINOKUROV, M. K., RYAZHSKAYA, T. K.

"Influence of Heating Following Homogenization on Properties of Ingots of Al-Mg-Zn System Alloy"

Metallurgiya [Metallurgy -- Collection of Works], No 14, Leningrad, Sudostroyeniye Press, 1971, pp 52-54, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G235 by the authors).

Translation: The influence of modes of homogenization and heating for rolling on mechanical properties and microstructure of ingots in the Al-Mg-Zn alloy system are studied with a ratio Mg/Zn = 2. Increasing heating time before rolling at 410° from 1 to 10 hours results in separation of chromium and other refractory phases within the grains of the solid solution. 1 Figure; 1 Table; 2 Biblio. Refs.

1/1

USSR UDC 669.715.5.721.018.29.669.018.2

BABICHEV, B. I., ZOLOTOREVSKIY, Yu. S., NEZHNIKOVSKIY, I. A., RAYAZHSKAYA, T. K.

"The Problem of the Inertia of Natural Aging of Alloys in System Al-Zn-Mg With Mg/Zn 2 and Its Influence on Mechanical Properties"

Metallovedeniye[Metal Science -- Collection of Works], No. 14, Leningrad, Sudostroyeniye Press, 1970, pp. 160-165. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I678 by the authors).

Translation: The kinetics of the decomposition of the solid solution of an alloy in the system Al-Zn-Mg and the mechanical properties produced are studied. 2 figs; 2 tables, 12 biblio refs.

1/1

USSR UDC 669.715.5.721.018.29.620.193

BABICHEV, B. I., ZOLOTOREVSKIY, Yu. S., KLEPTSOVA, I. S., NEZHNIKOVSKIY, I. A., RYAZHSKAYA, E. K.

"Properties of Alloys in the System Al-Zn-Mg as Functions of Artificial Aging Mode"

Metallovedeniye [Metal Science -- Collection of Works], No. 14, Leningrad, Sudostroyeniye Press, 1970, pp. 145-150. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I677 by the authors).

Translation: The properties of alloys in the system Al-Zn-Mg are studied with various aging modes. It is demonstrated that the alloy has satisfactory corrosion resistance with long storage following hardening with subsequent 2-stage aging (temperature of stage II 140°). 4 figs; 3 tables; 3 biblio refs.

1/1

USSR

UDC 547.241 + 547.74/75

NGUYET FYUNG, IVANOVA, Zh. M., DERKACH, G. I. (deceased), and BABICHEV, F. S.

"Reactions of Indolicine and Pyrrolo[1,2-a]-benzimidazole With Isocyanates and Isothiocyanates of Phosphorus Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 319-322

Abstract: 2-Methylindolicine and pyrrolo[1,2-a] benzimidazole react with isocyanates and isothiocyanates of phosphorus acids to yield N-phosphorylated amides (or thioamides) of 2-methylindolicine-3-carboxylic acid and the pyrrolo[1,2-a]benzimidazole-1-(or -3-)-carboxylic acid respectively. The products are crystalline, unstable to heat, so they cannot be purified by recrystallization. A petroleum ether solution of freshly distilled isocyanate of a phosphorus acid is added dropwise to pure 2-methylindolicine with stirring at room temperature. The product crystallizes at the end of reaction; separated, washed with petroleum ether and dried under vacuum.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--2,BENZOSELENAZOLYALKYL (ARYL) CARBINOLS -U-

AUTHOR-(02)-LIKHITSKAYA, V.S., BABICHEV, F.S.

COUNTRY OF INFO--USSR

SOURCE--KHIM. (GETEROTSIKL.) SOEDIN. 1970, (2), 164-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENEZE DERIVATIVE, ORGANOSELENIUM COMPOUND, HYDROXYL RADICAL, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1113 STEP NO--UR/0409/70/000/002/0164/0166

CIRC ACCESSION NO--AP0104511

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104511

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ET 3,(2,BENZOSELENAZOLYL)PROPIONATE (9.3 G) IN 0.1 L. ABS. ET SUB2 O WAS ADDED TO 2.22 G LIALH SUB4 IN 0.1 L. ABS. ET SUB2 O DROPWISE AT MINUS 50DEGREES WITH STIRRING UNDER H AND THE MIXT. STIRRED 1 HR AT MINUS 50DEGREES TO GIVE 71PERCENT I (X ABSENT), M. 36DEGREES, B SUB0.5 173-5DEGREES; 3,5,DINITROBENZOATE M. 114DEGREES; URETHANE M. 98DEGREES. SIMILARLY, WERE PREPD. I (X, PERCENT YIELD, M.P., B SUB0.01, M.P. 3,5,DINITROBENZOATE, AND M.P. URETHANE DERIV. GIVEN): CH SUB2, 84, 27DEGREES, 104DEGREES, 117DEGREES, 171DEGREES; O, 58, 45DEGREES, 122DEGREES, 115DEGREES, 215DEGREES; S, 81, -, 138DEGREES, 105DEGREES (DIL. ALC.), 236DEGREES; NPH 89, 84DEGREES (PETROLEUM ETHER), -, 100DEGREES, 204DEGREES. SIMILARLY, WERE PREPD. II (X, PERCENT YIELD, M.P., M.P. 3,5,DINITROBENZOATE, M.P. URETHANE, AND M.P. PERCHLORATE GIVEN): CH, 94, 78DEGREES (PETROLEUM ETHER), 80DEGREES, 83DEGREES (DIL. ALC.), 207DEGREES (ALC.); N, 85, 99DEGREES (DIL. ALC.), 196DEGREES, 180DEGREES, -. I AND II GAVE QUATERNARY SALTS WITH ME SUB2 SO SUB4 OR MEI AND BROMIDES WITH PBR SUB3, WHICH YIELDED BENZOSELENAZOLIUM SALTS ON HEATING.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REACTIONS OF O,CHLOROMETHYL BENZONITRILE WITH AMINES. CONDENSATION OF O,CHLOROMETHYL BENZONITRILE WITH AROMATIC AND ALIPHATIC AMINES -U-
AUTHOR-(02)-BABICHEV, F.S., TYLTIN, A.K.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(1), 62-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC NITRILE COMPOUND, AROMATIC AMINE, ALIPHATIC AMINE, HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0073 STEP NO--UR/0073/70/036/001/0062/0065

CIRC ACCESSION NO--AP0125908

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125908

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. O,CLCH SUB2 C SUB6 H SUB4 CN AND RNH SUB2 GIVE I, CONVERTED TO II BY BASE. II WITH ME SUB2 SO SUB4 FORM III, THE FREE BASE (IV) OF WHICH CAN BE CONVERTED TO V WITH ME SUB2 SO SUB4. THE COMPDS. ARE CHARACTERIZED. I,V, AND III (R EQUALS PH) WITH 20PERCENT NAOH GAVE N PHENYLPHTHALIMIDINE. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--REACTIONS OF O,CHLOROMETHYLBENZONITRILE WITH AMINES. 2. CONDENSATION OF O,CHLOROMETHYLBENZONITRILE WITH ANTHRANILIC ACID ESTERS

AUTHOR-(02)-BADICHEV, F.S., TYLTIN, A.K.

B

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(2), 175-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CONDENSATION REACTION, CHLORINATED ORGANIC COMPOUND, AMINE DERIVATIVE, ORGANIC NITRILE COMPOUND, ALKYLATION, ISOMER, KETONE, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2221 STEP NO--UR/0073/70/036/002/0175/0178

CIRC ACCESSION NO--AP0125800

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0125800
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. O-CLCH SUB2-C SUB6 H SUB4 CN AND O-H SUB2 NC SUB6 H SUB4 CO SUB2 ME IN ISO-PROH WAS REFLUXED TO GIVE 11H-ISOINDOLO(2,1-A)QUINAZOL-5-ONE-HCL, M. 282-4DEGREES (ETOH), ALSO PREPD. FROM O-H SUB2 NC SUB6 H SUB4 CO SUB2 ET (FREE BASE (I) M. 274-7DEGREES (HCONME SUB2)). THE HYPOTHETICAL INTERMEDIATE IS A DERIV. OF IMINOPHTHALIMIDINE. I AND ME SUB2 SO SUB4 OR P-MEC SUB6 H SUB4 SO SUB3 ET FORMED THE CORRESPONDING SALTS, M. 268-70DEGREES, AND 278-80DEGREES (HOAC), RESP. THESE SALTS WERE CONVERTED BY AQ. NH SUB4 OH INTO THE CORRESPONDING 6-ALKYLISOINDOLO(2,1-A)QUINAZOL-5-ONES (II), M. 190-2DEGREES (PYRIDINE) AND 138-41DEGREES (PYRIDINE), RESP. THE IR SPECTRA OF THESE COMPDS. ARE NOT IN ACCORD WITH THE ISOMERIC STRUCTURE INVOLVING O,ALKYLATION. II REACTED EASILY WITH AC SUB2 O, BZCL, AND PHN SUB2 CL TO FORM THE 11-SUBSTITUTED DERIVS. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

UDC 620.178.162

USSR

KRUSHCHOV, M. M., and BABICHEV, M. A., Moscow

"Abrasive Durability and Physical Characteristics of a Material"

Moscow, Mashinovedeniye, No 2, Mar-Apr 71, pp 106-111

Abstract: This article compares the relative durability for a number of technically pure metals, alloys, and nonmetals, determined experimentally with their modulus of normal elasticity and for metals giving the characteristics of the basic physical properties and combinations of these characteristics.

Figures 1-8 depict graphically the relationship between relative durability and factors such as the modulus of elasticity for various materials, the parameter (θ^2.A), heat content, melting point, and activation energy.

As a result thereof the relative durability is given as a function of approximate regular physical parameters. Formulas are then proposed to express these functions.

Table 1 compares the relative durability for a number of materials under abrasive wear as well as the parameter (θ^2.A). In addition, Table 2 also lists and compares the thermodynamic properties of several metals.

The method used herein permits the relative durability to be determined for a number of materials and their theoretical strength to be approxi-

1/2

USSR

KRUSHCHOV, M. M., and BABICHEV, M. A., Mashinovedeniye, No 2, Mar-Apr 71, pp 106-111

mately estimated.

The article contains eight figures, two tables, and five equations; eleven literature references are cited

2/2

USSR UDC: 621. 7 .8.082.22

BABICHEV, R.

"Waves in a Staircase System With Tips and Recesses"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. UVCh (Electronic Engineering, Scientific-Technical Collection, UHF Electronics) 1970, No. 12, p 78 (from Ref-Radiotekhnika, No. 5, March 71, Abstract No. 5B153)

Translation: The method of partial areas is used to obtain a dispersion equation for staircase delay systems with arbitrary pin cross section. Author's abstract

1/1

USSR UDC: 621.372.8.092.22

BABICHEV, R. K., IVANOV, V. N.

"The Quasistatic Theory of Lattices and its Application to Calculation of a Ladder Type Decelerating System"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1971, vyp. 1, pp 35-45 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B107)

Translation: Excitation of an array of ideally conductive hollow structures by the field of a slow wave with high phase shift (up to π) on a period is considered in the quasistatic approximation (period much shorter than a wavelength in free space). The averaged boundary conditions for the arrays are supplemented by one more parameter, and the dependence on phase shift is determined for all parameters appearing in the boundary conditions. These conditions are then used for calculating ladder type decelerating systems with projection or indentation, and with rods of circular cross section. Four illustrations, bibliography of seven titles. Resumé.

1/1

USSR

UDC 615.214.32

BABICHEV, V. A., UTESHEV, B. S., KUDRYASHOV, V. M., BEREZINA, T. A., Department of Pharmacology, II Moscow Medicinal Institute imeni N. I. Pirogova

"Immunodepressive Action of Cytosine Arabinoside"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 473-476

Abstract: The effect of the antimetabolite cytosine arabinoside (CA) on sheep erythrocyte stimulated primary immunological response in normal mice and in the system of syngenic transmission in lethally irradiated animals with a parallel study of the antibody producing cells and cell precursors was investigated. SVA mice (18-20 gm) were injected intravenously with 5% sheep erythrocytes ($5x10^8$ cells), sacrificed after 4 days, the spleens isolated and the primary antibody (AB) forming cells determined by the method of Jerne and Nordin. CA, upon injection (500 mgm/kg) 48 hours after immunization, produced a maximum immunodepressive effect (16 AB-producing cells per 10^5 nucleated spleen cells versus 203 AB-producing cells in the control -- no injection). CA injected 24 hours after or 24 hours before immunization, reduced AB-producing cells to 89 and 126 cells per 10^6 nucleated spleen cells. Injection of CA (100 mgm/kg) at 24, 48, and 72

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230002-0"

USSR

BABICHEV, V. A., et al., Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 473-476

hours after immunization prevented almost completely AB-producing cells (4 AB-producing cells per 10^6 spleen cells). Spleen cells from the rats injected at 24, 48, and 72 hours with CA were injected into recipient rats and the effect of CA on the population of precursor cells of the primary immunological response was studied. Recipients demonstrated 6 hemolytic foci (corresponding to 1 precursor vell) compared with controls which contained 20 hemolytic foci. The number of plaque-forming cells in experimental recipients in the whole spleen was about 128, those in the control about 516. It was concluded that experimental and control animals' proliferative possibilities of U-cells are realized in the organs of lethally irradiated recipients to the same degree. Whether CA elicits the lowering of proliferative possibilities of all nucleus containing cells or only that of precursor cells is the subject of further studies.

2/2

UDC: 616-097.612.017-[illegible]

ACTIVATION OF DNA SYNTHESIS IN LYMPHOID CELLS OF THE SPLEEN IN THE INDUCTIVE PHASE OF THE PRIMARY IMMUNOLOGICAL RESPONSE

[Article by G.F. Maksimova, V.A. Babichev, B.S. Utrshev, Second Moscow Medical Institute imeni N.I. Pirogov; Moscow, Vestnik Akademii Meditsinskikh Nauk [illegible] Russian, No 11, 1971, pp 67-73]

It is a known fact that splenic cells are subject to transformation and proliferation under the influence of antigenic stimulation (Marshall and White). However, until recently the kinetics of this process had not been sufficiently investigated.

Most autoradiographic works dealing with the role of cell division in immunity have been performed on models using isolated cell systems, in vitro cultures of lymphoid cells (Dutton and Mishell) or lymphocyte cultures in vivo (Capalbo et al.). The cellular "events" that unfold in response to an antigen in the "closed system" of diffusion chambers have been investigated in detail by Capalbo and Makinodan. It was shown in these works that cultivated lymphoid cells respond to antigen by a rise in the tag index and mitotic coefficient. The authors assume that the time of generation of immunocompetent cells is shortened under the influence of antigenic stimulation. But caution is needed in interpreting the data mentioned above in view of the artificial nature of the immunological systems chosen by the researchers.

When investigating cell division in the terminal centers of lymphatic tissue in the course of in vivo immunogenesis, Shooley, Nossal, and Makela, as well as Hanna demonstrated proliferation of large pyroninophilic cells which incorporated H^3-thymidine intensively under the influence of antigen.

On the other hand, V.P. Gusev, who used a tritium label in vitro, discovered that in the spleen of immunized mice DNA synthesis is activated first in the small lymphocytes which the authors distinguished in a special group of pyroninophilic lymphocytoid cells.

In this connection it seemed interesting to investigate the kinetics of proliferative processes in a heterogeneous population of lymphoid cells of the spleen throughout the inductive phase of the primary immunological response

BABICHEV, V.A.

1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EFFECT OF INHIBITORS OF NUCLEIC ACID AND PROTEIN SYNTHESIS AND CELL DIVISION OF THE PRIMARY IMMUNOLOGICAL RESPONSE -U-
AUTHOR-(04)-UTESHEV, B.S., PINEGIN, B.V., BABICHEV, V.A., LEVASHEV, V.S.

B

COUNTRY OF INFO--USSR

SOURCE--VESTN. AKAD. MED. NAUK SSSR 1970, 25(1), 62-70

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEIC ACID, PROTEIN, CELL PHYSIOLOGY, IMMUNOLOGY, BIOSYNTHESIS, CHLORAMPHENICOL, ANTIBODY, SPLEEN, MITOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0362 STEP NO--UR/0248/70/025/001/0062/0070

CIRC ACCESSION NO--AP0127943

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0127943
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF INHIBITORS OF DNA BIOSYNTHESIS, E.G., 5,FLUOROURACIL (I), AMETHOPTERIN (II) OR 9,AZAGUANINE, OF RNA BIOSYNTHESIS, E.G., AURANTHIN OR ETHIONINE, OF PROTEIN BIOSYNTHESIS, E.G., CHLORAMPHENICOL (III), AND OF CELL DIVISION, E.G., COLCHICINE (IV) ON THE PRIMARY IMMUNE RESPONSE WAS DETD. ALL INHIBITORS OF DNA OR RNA BIOSYNTHESIS WERE STRONG IMMUNODEPRESSANTS; THE MAX. EFFECT OCCURRED AFTER TREATMENT DURING EARLY STAGES OF IMMUNOGENESIS. ANTIBODY FORMING CELLS WERE RELATIVELY STABLE TOWARD III. IV CAUSED A MARKED DROP IN ANTIBODY PRODUCING CELLS IN THE SPLEEN; HOWEVER, WITH COMPLETE INHIBITION OF MITOSIS, ANTIBODY BIOSYNTHESIS STILL OCCURRED. THUS, ANTIBODY PRODUCING CELLS CAN EVIDENTLY FORM BY TRANSFORMATION OF NONPRODUCING CELLS AS WELL AS BY MITOSIS.
FACILITY: II MOSK. MED. INST. IM. PIROGOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--KINETICS OF ANTIBODY FORMING CELLS IN THE CULTURE OF LYMPHOID CELLS OF THE SPLEEN -U-

AUTHOR-(04)-PINEGIN, B.V., UTESHEV, B.S., BABICHEV, V.A., KORSHUNOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 4, PP 68-72

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBODY, CELL CULTURE, LYMPHATIC SYSTEM, SPLEEN, CULTURE MEDIUM, HEMOLYSIS, AGAR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1673 STEP NO--UR/0016/70/000/004/0068/0072

CIRC ACCESSION NO--AP0106419

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DESCRIBE THE KINETICS OF ANTIBODY FORMING CELLS IN CULTURING LYMPHOID CELLS IN VITRO. SUSPENSION OF LYMPHOID CELLS OF THE SPLEEN WAS GROWN IN GLASSES ON 1PERCENT AGAR WITH THE USE OF HOTTINGER BROTH AS A NUTRIENT MEDIUM. THE NUMBER OF ANTIBODY FORMING CELLS WAS DETERMINED BY THE METHOD OF LOCAL HEMOLYSIS IN AGAR BY JERNE AND NORDIN'S METHOD. IN CULTURING UNDER THE MENTIONED CONDITIONS OF THE CELLULAR SUSPENSION OF THE SPLEEN OBTAINED FROM MICE ON THE 4TH DAY AFTER THE IMMUNIZATION, ANTIBODY FORMATION WAS OBSERVED FOR AT LEAST 16 DAYS. DURING THE FIRST DAY OF CULTURING THERE WAS A MARKED REDUCTION OF THE NUMBER OF ANTIBODY FORMING CALLS HOWEVER, THEIR NUMBER INCREASED AGAIN ON THE 7TH DAY, AND REMAINED CONSIDERABLE UP TO THE 16TH DAY, EXCEEDING THEIR NUMBER IN THE SPLEEN OF IMMUNIZED ANIMALS MANY TIMES.

UNCLASSIFIED

USSR

UDC 621:669.018.25.620.178.16

KHRUSHCHOV, M. M., BABICHEV, M. A., BERKOVICH, YE. C., KOZYREV, S. P., KRAPOSHINA, L. B., PRUZHANSKIY, L. YU.

Izmosostoykost' i struktura tverdykh naplavok (Wear Resistance and Structure of Hard Surfacing), Moscow, Mashinostroyeniye Press, 1971, 95 pp

Translation of Forewardi Application of hard wear-resistant surfacing to face the working surfaces of machine parts is one of the very efficient methods of increasing the service life of the parts. The problems of expedient selection of the surfacing materials as a function of the operating conditions of the parts, just as the problems of the technological methods of surfacing, have not been sufficiently clarified. Many surfacing alloys are known, and it is of practical interest to compare their properties under identical test conditions, in particular when testing for abrasive wear.

The book contains discussions of the results of laboratory testing of surfacing materials for abrasive wear, impact bending strength, hardness, and microhardness of the structural components. The results of a study of the microstructure are also presented. These studies were performed by the authors of the book at the Wear Resistance Laboratory of the State Scientific Research Institute of Mechanical Engineering.

1/4

USSR

KHRUSHCHOV, M. M., et al., Iznosostoykost' i struktura tverdykh naplavok, Moscow, Mashinostroyeniye Press, 1971, 95 pp

The last chapter contains a discussion of the research data of a number of Soviet authors on the operational and laboratory comparative tests for abrasive wear of different surfacing materials applied to parts with different operating conditions.

The book is a reference manual for the properties of various surfacing materials during abrasive wear.

The abrasive wear tests on the Kh4-B machine were performed by M. A. Babichev, on the NK machine by Ye. S. Berkovich, for hydroabrasive wear by S. P. Kozyrev, and for impact toughness by L. Yu. Pruzhanskiy. A microstructural study and a microhardness test were performed by L. B. Kraposhina. The work was coordinated by M. M. Khrushchov.

Translation of Table of Contents

USSR

KHRUSHCHOV, M. M., et al., Iznosostoykost' i struktura tverdykh naplavok, Moscow, Mashinostroyeniye Press, 1971, 95 pp

3/4

USSR

KHRUSHCHOV, M. M., et al., Iznosostoykost' i struktura tverdykh naplavok, Moscow, Mashinostroyeniye Press, 1971, 95 pp

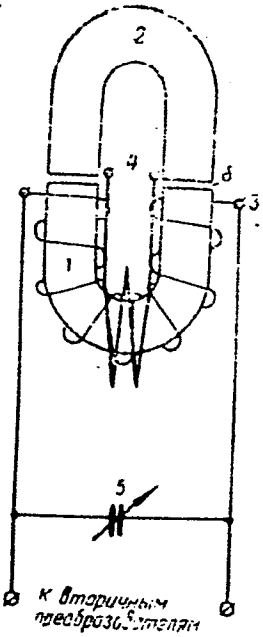
4/4

BABIKOV M.A.

AA0049394

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,



241543 TEST SET FOR MAGNETIC CORES, comprising electromagnet (1) with two windings linked through an air gap with test sample (2). The test winding is bridged by a compensating capacitor calculated from equation of reactive components introduced by the air gap and the test winding. 17.1.68 as 1211863/18-10.M.A. BABIKOV et al (1.9.69) Bul 14/18.4.69. Class 21e. Int.Cl.G 01r.

2-70

AUTHORS: BAbikov, M.A.; Seleznev, Yu.V.; Maslov, Yu.N.; Rhyzhkov, G.P.

19801225

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--N N INTERACTION AND THE AVERAGE NUCLEAR FIELD -U-

AUTHOR--BABIKOV, V.V.

B

COUNTRY OF INFO--USSR

SOURCE--(JINR P4-4897) LAB. OF THEORETICAL PHYSICS). 1970. 30P. DEP. CFSTI

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEON INTERACTION, HEAVY NUCLEUS, NUCLEAR FORCE, NUCLEAR STRUCTURE, MESON INTERACTION, NUCLEAR POTENTIAL BARRIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2172 STEP NO--UR/0000/70/000/000/0030/0030

CIRC ACCESSION NO--AT0127536

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AT0127536
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAIN TRENDS AND THE LATEST ACHIEVEMENTS IN NUCLEAR FORCES THEORY ARE REVIEWED. POTENTIAL MODELS OF INTERACTION IN THE TWO NUCLEON SYSTEM AND IN A HEAVY NUCLEUS ARE CONSIDERED. THE ROLE OF THE HEAVY MESONS IN CREATING OF A SELF CONSISTENT NUCLEAR POTENTIAL IS ANALYZED. STATISTICAL THEORIES OF NUCLEAR MATTER DISTRIBUTION IN FINITE NUCLEI ARE DISCUSSED.
FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA, USSR.

UNCLASSIFIED

USSR UDC 616.927-085.371:576.851.49]-039.71-032:611.3]-036.8

MESHALOVA, A. N., KURLOVA, V. I., TELESHEVSKAYA, E. A., BABINA, V. P., GOKHSHTEYN, S. E., LIROVA, B. M., LAVROVSKAYA, V. M., TAMARIN, Yu. A., and NEGINA, Yu. I., Moscow Institute of Vaccines and Sera imeni Mechnikov, Gor'kiy Institute of Epidemiology and Microbiology, and Moscow Municipal and Kuntsevo Sanitary Epidemiological Stations

"Peroral Immunization of Humans with Typhoid Vaccines in a Strictly Controlled Experiment"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 71-77

Abstract: Following a successful trial of enteral immunization of children with heated typhoid vaccine, larger doses of the same vaccine - heated and chemical - contained in sugar-coated tablets were given in a double-blind test to 1295 children age 3 to 15 and 274 adults in 2 equal doses 15 to 30 days apart. The reactions to the vaccine were mild and they generally occurred after ingestion of the first tablet: in 13.60% and 9.31% those who took the heated and chemical vaccines, respectively (in 5.88% of those who received placebo). Both vaccines produced high antibody titers against the O, Vi, and H antigens in the sera of the children as well as the adults. The authors recommend a major epidemiological trial of the vaccines in regions with a high incidence of typhoid.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SOME PECULIARITIES OF THE EFFECT OF SODIUM TRIPOLY PHOSPHATE ON PORTLAND CEMENT SLIMES -U-

AUTHOR-(03)-BUDNIKOV, P.P., ENTIN, Z.B., BABIN, G.A.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 333-336

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CEMENT, SODIUM PHOSPHATE, CALCIUM SULFATE, COLLOID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1586 STEP NO--UR/0069/70/032/003/0333/0336

CIRC ACCESSION NO--AP0125208

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125208
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 0.05-0.2PERCENT OF SODIUM TRIPOLYPHOSPHATE INTRODUCED INTO CEMENT PRODUCES A SIGNIFICANT LIQUEFYING EFFECT, WHICH IS ASSOCIATED WITH THE EXCHANGE ADSORPTION INTERACTION IN COLLOID DISPERSE SYSTEMS AND DOES NOT DEPEND ON THE MINERALOGICAL COMPOSITION OF SLIME, UNLESS IT CONTAINS CALCIUM SULPHATE.
FACILITY: KHIMIKO-TEKHNOLOGICHESKIY INST. IM. D. I. MENDELEYEVA, MOSCOW.

UNCLASSIFIED

USSR

UDC: None

GUREVICH, S. B., BABIN, L. V., AND PLIS, A. I.

"Doppler Effects in Acoustical Holography"

Leningrad, Zhurnal tekhnicheskoy fiziki, No 2, 1972, pp 398-408

Abstract: The purpose of this paper is to obtain accurate relationships for locating, expanding, and resolving the restored holographic image in acoustics, to analyze the aberrations that arise in scanning, and to explain the applicability of the mutuality principle in acoustical holography. The term "Doppler effects" is defined as those acoustical effects which arise during recording of the hologram when the radiator and/or the receiver is moved in the acoustical field of the object, and which affect the localization, enlargement, and resolution capability in the restored image. "Scanning" is defined as mechanically or nonmechanically shifting the sound radiator or receiver in the field of the object. Acoustical holography without reference sources when the receiver is moved at ultrasonic velocities is discussed, and conditions for the reliability of the mutuality principles are derived for two specific cases. The authors are connected with the A. F. Ioffe Physico-Technical Institute at Leningrad.
1/1

USSR

UDC 620.179.16

BABIN, L. V., BELOGORODSKIY, B. A., ZHELEZNOV, I. M., and KHOPOV, V. V., Physicotechnical Institute imeni A. F. Yoffe, Academy of Sciences, USSR

"A Multi-element Scanning Device for Acoustic Holography"

Sverdlovsk, Defektoskopiya, No 2, 1972, pp 100-104

Abstract: The multi-element scanning device described here is intended for nondestructive inspection and flaw detection by methods of acoustic holography. A simple electronic device was developed for discrete interference processing of the obtained signals. This is a device of a mixed type, which to a certain degree combines the simplicity and reliability of a mechanical scanning system with the rapid selection of an acoustic field that is inherent in electronic scanning systems. This effect is obtained by means of mechanical scanning by a large number of pickups situated in a line, with simultaneous electronic commutation of the pickups along the line. The described device was tested during operation with commutatingpulses 30-50 microseconds in duration; the duty cycle was varied within the limits of 1-5 megahertz; the number of circulation cycles was on the order of 80-100. 3 figures. 1 reference.

1/1

USSR UDC 632.954:547

DENISENKOVA, R. N., BABIN, V. V., and UGRYUMOV, YE. P., Northern Caucasus Scientific Research Institute of Phytopathology

"Phytotoxicity of the Derivatives of Aryloxyalkylcarboxylic Acids"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 9 (119), 1973, pp 54-58

Abstract: Herbicidal activity of a series of substituted isopropyl, β-thiocyanoethyl esters of aryloxyalkylcarboxylic acids, tin containing aryloxyacylates and bis-(aryloxyacetyl)-propyleneglycols-1,3 has been investigated on leaf mustard and on the winter crop wheat. From the data on leaf mustard no clearcut structure-activity relationship could be established, although the phenoxyisopropyl radical appeared to have some effect. Among the thiocyanogens only the β-thiocyanoethyl ester of 2,4-D was more active than the standard control. Tin containing derivatives of 2,4,5-T and 2,4,5-TP were less active than the butyl esters. Among the propylene glycol derivatives, substitution of 2,4-D and 2M-4Kh gave stronger agents, but 2,4,5-T -- a weaker one. Since most of the herbicides studied on wheat did not lower the yield of grain, it is suggestible that they could be used as selective herbicides.

1/1

USSR

UDC 632.95

BABIN, V. V., DENISENKOVA, R. N., UGRYUMOV, YE. P., SHCHEGLOV, YU. V., BLIZNYUK, N. K., STREL'TSOV, R. V., and KOLOMIYETS, A. F., Northern Caucasus Scientific Research Institute of Phytopathology; All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Herbicide"

USSR Authors' Certificate No 250603, filed 14 Jun 68, published 26 Jan 70, (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N601P by N, B. VSEVOLOZHSKAYA)

Translation: Compounds of the general formula $[4\text{-Cl-2RC}_6\text{H}_3\text{OCH}_2\text{C(O)O}]_2\text{SnBu}_2$ (I) (R = Cl or Me) are not inferior in herbicidal activity to butyl esters of the corresponding aryloxyalkylcarboxylic acids. For example, mustard plants in the six-leaf phase were sprayed with aqueous solutions of I in a does of 50, 100, 250 and 500 g/ha (calculated in acid equivalent). The dose at which the weight of aboveground portions of the plant declines 50% was 53 g/ha for I (R = Cl), whereas that for the butyl ester of 2,4-D was 61 g/ha.

1/1

USSR

UDC 632.95

BABIN, Ye. P., SKAVINSKIY, Ya. P., ANDRUKHOV, N. A., SEDLOVA, L. N., LITOSHENKO, N. A., and RUDAVSKIY, V. P.

"Chlorination of Diphenyl Ether and Its Derivatives"

Khim. tekhnologiya. Nauch.-proizv. sb. (Chemical Technology. Science-Production Collection), No 3 (69), 1973, pp 48-49 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N571 by D. Z. Levin)

Translation: Sulfides of metals with variable valence or mixtures of Sb_2S_5 and I_2 are used as a catalyst to chlorinate Ph_2O and $(MeC_6H_4)_2O$. Example. Ph_2O and 0.3% Sb_2S_5 are loaded into a reactor and Cl_2 is supplied at 70-80° for 4 hours at the rate of 30 g/hour. Tetrachlorodiphenyloxyide is obtained, boiling point 155-7°/5. Heptachlorodiphenyloxide, FeS, 111-3 are obtained in a similar fashion (the substance, catalyst, and boiling point in °C are given); octachloro-4, 4'-ditolyl ether, FeS, 192-4 (ethyl alcohol); ω,ω,ω,ω',ω',ω'-hexachloroditolyloxide, PCl_5, —; ω,ω,ω,ω',ω',ω'-hexachloro-2,2'-dichloroditolyl ether, Sb_2S_5, 300 (decomposition); trichloro-4,4'-dicarboxydiphenyloxide, —, 259-61; pentachloro-4,4'-dicarboxydiphenyloxide, $I_2 + H_2SO_4$, 192-3; octachloro-4, 4'-dicarboxydiphenyloxide, $H_2SO_3 + I_2$, 268-70. These chloro derivatives are used as synergistic additives in herbicides, insecticides, and nematocides.
1/1

USSR

RUDAVSKIY, V. P., LITOSHENKO, N. A., and BABIN, YE. P.

"Synthetic Method for Tetra-(p-nitrophenyl)-ester of Dichloromaloylbisamidophosphoric Acid"

USSR Author's Certificate No 345164, filed 2 Aug 68, published 6 Mar 73 (from RZh-Khimiya, No 20, Oct 73, Abstract No 20 N 507P)

Translation: Tetra-(p-nitrophenyl)-ester (I) of dichloromaloylbisamidophosphoric acid is obtained by reacting $CCl_2[CONHP(O)Cl_2]_2$ (II) with $p\text{-}NO_2C_6H_4CH$ (III) in presence of an HCl acid acceptor, in an inert organic solvent. Example. A mixture of 0.04 mole III, 0.04 mole Et_3N, 0.04 mole II in 20 ml C_6H_6 is refluxed for 30-40 min and kept for 6 hr at 20°, the $Et_3N \cdot HCl$ is filtered off, the solvnet evaporated, yielding I, the yield 62%, m.p. 107-8°. I exhibits a high fungicidal and insecticidal activity.

1/1

USSR UDC 547.461'3.26.118.07

RUDAVSKIY, V. P., LITOSHENKO, N. A., and BABIN, YE. P.

"A Method of Making Tetra-(p-nitrophenyl) Ester of Dichloromaloylbis-Amidophosphoric Acid"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, Aug 72, Author's Certificate No 345164, Div C, filed 2 Aug 68, published 14 Jul 72, p 96

Translation: This Author's Certificate introduces a method of making tetra-(p-nitrophenyl) ester of dichloromaloyl-bis-amidophosphoric acid. As a distinguishing feature of the patent, dichloromaloyl-bis-amidophosphoryl tetrachloride is reacted with p-nitrophenol in the presence of a hydrogen chloride acceptor in an inert organic solvent with subsequent isolation of the goal product by conventional methods.

1/1

USSR

UDC 632.95

RASKIN, M. S., USKOVA, L. A., SVIRIDENKO, A. S., RYZHKOV, A. A., BABIN, YE. P.

"Analysis of 2-Methoxy-3,6-dichlorobenzoic Acid in Plant Mass by a Combined Method"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 363-365 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N503)

Translation: The herbicide is extracted from the plant mass, the dry extract is dissolved in a mixture of 75% alcohol with dioxane (4:1); it is applied to the first entire bean leaves at the time of development of the first trefoil (50 microliters/plant); the plants are gathered 5-6 days after treatment considering the weight of the dry mass of the trefoil.

1/1

USSR

UDC 632.95

RYZHKOV, A. A., GEYD, YU. P., BABIN, YE. P., SVIRIDENKO, A. S., CHEKAVSKAYA, L. A.

"Analysis of 2-Methoxy-3,6-dichlorobenzoic Acid by Gas-Liquid Chromatography" Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 116-119 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N504)

Translation: For extraction of 2-MeO-3,6-$Cl_2C_6H_2COOH$ (I) from an aqueous solution, 1 ml of dilute H_2SO_4 (1:1) is added to 100 ml of sample, it is agitated for 5 minutes, and extracted with 100 ml of ether. For extraction of the compound from the soil, 50 ml of ether and 1 ml of H_2SO (1:1) are added to 50 grams, it is agitated for 5 minutes and filtered. By a mixture of ether and H_2SO_4, the I is extracted from the plant mass. The extracts are dried over Na_2SO_4, they are concentrated to a volume of 3-5 ml, methylated with a solution of CH_2N_2 in ether (15 minutes) and evaporated. The residue is analyzed on a chromatograph with a flame-ionization detector in a column with TND-TS-M of a

1/2

USSR

RYZHKOV, A. A., et al., Tr. 2-go Vses. soveshch. po issled. ostatkov pesticidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy, Tallin, 1971, pp 116-119

0.17-0.18 mm fraction treated with a 4% liquid phase PMFS-4 or SKFT. For the calculation, the internal standard method was used for which $2,4\text{-}Cl_2C_6H_3COOMe$ was applied. The sensitivity of the method was 0.4-1.5 mg/kg.

2/2

USSR

UDC 632.95'

SKAVINSKAY, YA. P., BABIN, YE. P., SENGEYEV, YE. V., and NIKOL[illegible]SKIY, N. M.

"Method of Preparing Acid Chlorides of Chlorinated Benzoic Acids"

USSR Authors' Certificate No 255250, filed 21 Sep 68, published 1 Apr 70 (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N613P by T. A. BELYAYEVA)

Translation: 43.5 g $PhCCCl_3$ are chlorinated at a temperature of 110-115° in Cl_2 gas (30 g/hr) for 3 hr in the presence of 0.1-10% FeS as catalyst. A mixture is obtained containing eight acid chlorides of di-, tri- and tetrachlorobenzoic acids, which are used in the production of herbicides.

1/1

USSR

UDC 632.95

RUDAVSKIY, V. P., LITOSHENKO, N. A., BABIN, YE. P.

"Bis-Trichlorophosphazopolyhalogen Carbacyls"

Khim. prom-st' Ukrainy. Nauchno-proizv. sb. (Chemical Industry of the Ukraine -- Collection of Scientific and Production Works), 1970, No 2(50), pp 46-47 (from RZh-Khimiya, No 19 (II), 10 Oct 70, Abstract No 19 N565 by S. LYUBARSKAYA)

Translation: Biologically active compounds of the formula $R(CON{=}PCl_3)_2$ (I) are obtained by the reaction of diamides of polyhalogen carboxylic acids with two moles of pulverized PCl_5 in a medium of PhCl or $PhNO_2$ at 80-120°/300-400 mm for 50-80 minutes or by passing dry Cl_2 through a mixture of diamide with two moles PCl_3 in CCl_4 under the same conditions. A vacuum is needed to remove the HCl gas which produces the various I. The following I are obtained with a yield of 86-96 percent (shown are R, melting point and decomposition temperature in °C): CCl_2, 118-21, 130-40; $(CH_2)_2$-$(CCl_2)_2$, 117-9, 140-50; $(CH_2)_4(CCl_2)_2$, 119-21, 160-70; $(CH_2)_6$-$(CCl_2)_2$, 159-61, 170-80; $(CF_2)_3$, 44-6, 200-210; $(CF_2)_4$, 76-8, 230-40; $p\text{-}CF_2(C_6H_4)_2$, 82-5, --; $(p\text{-}CF_2\text{-}C_6H_4)_2$, 127-9. The rate of

1/2

USSR

RUDAVSKIY, V. P., et al, Khim. prom-st' Ukrainy. Nauchno-proizv. sb. 1970, No 2(50), pp 46-47 (from RZh-Khimiya, No 19 (II), 10 Oct 70, Abstract No 19 N565 by S. LYUBARSKAYA)

the diamide reactions with PCl_5 decreases with an increase in the number of electronegative substituents in the bisacyl groups, but the thermostability of I increases.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--BIS,TRICHLOROPHOSPHAZO,POLYHALOCARBACYLS -U-

AUTHOR-(03)-RUDAVSKIY, V.P., LITOSHENKO, N.A., BABIN, YE.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (2), 46-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, AZO COMPOUND, ORGANIC PHOSPHORUS COMPOUND, ELECTRONEGATIVITY, CHEMICAL SUBSTITUENT, ACYL RADICAL, THERMAL STABILITY, ORGANIC SYNTHESIS, THERMAL DECOMPOSITION, CHEMICAL REACTION TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0823 STEP NO--UR/0436/70/000/002/0046/0047

CIRC ACCESSION NO--AP0124490

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124490

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS. (I), OF GENERAL FORMULA R(CON:OCL SUB3) SUB2, ARE PREPD. BY REFLUXING A POLYHALOCARBOXYLIC ACID DIAMIDE (II) IN VACUO WITH TWICE ITS WT. PCL SUB5 AT 80-120DEGREES. BY INCREASING THE NO. OF ELECTRONEG. SUBSTITUENTS IN THE ACYL GROUPS OF II, THE RATE OF REACTION WITH PCL SUB5 AND THE THERMAL STABILITY OF THE I PRODUCED CAN BE GREATLY INCREASED. I PREPD. ARE (R, REACTION TEMP., REACTION TIME (MIN), PERCENT YIELD, M.P., AND THERMAL DECOMPN. TEMP. GIVEN): (FORMULA SHOWN ON MICROFICHE).

UNCLASSIFIED

Organophosphorus Compounds

USSR

UDC 547.46.632.954

RUDAVSKIY, V. P., LITOSHENKO, N. A., and BABIN, YE. P.

"Bis-trichlorophosphazopolyhalocarbazyls"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 46-47

Abstract: Use was made of the synthesis of bis-trichlorophosphazopolyhalocarbazyls in order to establish the relationship between the structure and reactivity of polyhalodicarboxylic acid diamides and phosphorus pentachloride and to study the physiological properties as a function of the structure of polyhaloorganophosphorus compounds using the scheme of the phosphazo reaction. The reaction of polyhalodicarboxylic acid diamides with phosphorus pentachloride revealed the following regularity: when the number of electronegative substituents in the bis-acyl groups of polyhalodicarboxylic acid diamides is increased, the reaction rate with phospuorus pentachloride decreases. Bis-trichlorophosphazopolyhalocarbazyls are of great practical significance for obtaining various organophosphorus derivatives and biologically active compounds. These carbazyls are prepared from polyhalodicarboxylic acid diamides

1/2

USSR

RUDAVSKIY, V. P., et al, Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 46-47

which are placed into a reflux condenser together with double quantities of both phosphorus trichloride and carbon tetrachloride. At a vacuum of 200--300 ml and at 80--120°C, chlorine gas is passed through for 50--80 mins. Dicarboxylic acid dinitriles are prepared by thermal decomposition of bis-trichlorophosphazohalocarbazyls or by treatment with hydrogen chloride. Dicarboxylic acid dinitriles and phosphorus oxychlorides are identified by conventional methods.

2/2

(7)

USSR UDC 632.95

RUDAVSKIY, V. P., KUCHEROVA, M. N., KONDRATENKO, V. I., LITOSHENKO, N. A., and BABIN, Ye. P.

"Synthesis of Acylphosphazo Compounds"

USSR Author's Certificate No 316694, filed 10 Jun 68, published 27 Jan 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom (I, L-S), No 1(II), 1973, Abstract No 1N505P by T. A. Belyayeva)

Translation: Compounds RC(X)N = P(OOCR')YZ (I) (R = alkyl, alkyl halide, phenyl halide; X = O, NPh, NEt, NC_6H_4Me; R' = alkyl, alkyl halide, phenyl halide; Y and Z = Cl or OOCR') and $(R'''COO)_3P$ == NOCR"CON = $P(OOCR''')_3$ (II) (R"= alkylene halide; R''' = alkyl, alkyl halide, phenyl halide) are synthesized in reaction of corresponding trichloro- and bistrichlorophosphazo compounds (III) with carbonate in organic solvent. The reaction is terminated by boiling of the reaction mixture. Example. To 0.03, 0.06, or 0.09 mole R'COOM (M = Na or K) in 30 ml of organic solvent 0.03 mole RCON = PCl_3 is added during continuous stirring and cooling with ice water. The reaction mixture is boiled for 8-10 hrs on water bath, kept at 20°C for 6 hrs, MCl is removed by filtration and the remained mass is concentrated by evaporation. The obtained viscous liquid (I) (X = O) is purified by multiple precipitation from C_6H_6 or PhMe with petroleum ether. Using III, compounds II are prepared in a similar way. I and II can be used as herbicides.

1/1

USSR UDC 669.018.44:539.4

BABIN, YU. A.

"Increase in Plasticity of Heat-Resistant SAP-1 Material"

Tr. Mosk. aviats. in-ta. (Works of Moscow Aviation Institute -- collection of works) 1971, vyp. 228, pp 149-155 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I677)

Translation: The total and uniform elongation and also the test for minimum bending radius were taken as the basic criteria for estimating the plasticity of SAP-1 [sintered aluminum powder] sheets. The minimum bending radius of the sheet material was determined on plates 50 × 100 mm by bending on a special die. A study was made of the effect of the annealing conditions on the mechanical properties of the sintered aluminum powder: the annealing temperature was 350, 500, 600 and 630°, and the time was from 15 minutes to 100 hours. The total δ and especially the uniform elongation after annealing at temperatures of 600 and 630° increase most effectively. Accordingly, the minimum radius of bending varies from 8.0 and 5.5 S transversely and along the direction of rolling to 1.5 and 1.0 S (S is the sheet thickness). In estimating the effect of annealing on the sheet resistance of the sintered aluminum powder after annealing at 630° for three hours, the specimens were tested at 500°. Three illustrations, two tables, and a 4-entry bibliography.
1/1

USSR

UDC 669.018.295

BABIN, YU. A., FRIDLYANDER, I. N., KAMYSHKOV, A.S.

"Thermal Stability of Sintered Aluminum Powder"

Tr. Mosk. aviats. in-ta. (Works of Moscow Aviation Institute -- collection of works) 1971, vyp. 228, pp 156-165 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41676)

Translation: A study was made of the thermal stability of SAP-1 [sintered aluminum powder-1] sheets 2.0 and 2.5 mm thick. The sheets were obtained from a flat briquette undergoing degassing annealing at a temperature of 625±5° for 72 hours and cladded with AMts alloy 4-5% of the side thick. The Al_2O_3 content in the initial powder is ~8.3%. The total gas content in the sheets was ~3cm^3/100g. A study was made of the effect of long-term continuous heating at temperatures to 600° and also short-term heating at temperatures exceeding the melting point of the pure aluminum on the structure and properties of the material: in spite of the absence of a strict law, the tendency toward a reduction in strength when testing at a temperature of 350 and 500° after heating to 1000 hours at the same temperature is observed. The data on the material strength at 500° after annealing at 600° connected with polymorphic transformation of the Al_2O_3 at 550° from amorphous to the brittle crystal version deserves special attention.

1/2

USSR

BABIN, YU. A., et al. Tr. Moskaviats.in-ta., 1971, vyp. 228, pp 156-165

The test strength at increased temperatures varies little, and after holding at 600°, it even increases. The short-term holding of the alloy in the temperature range close to the melting point of aluminum leads to very perceptible increase in the heat resistance. Four illustrations, four tables, and a 6-entry bibliography.

2/2

Pharmacology and Toxicology

USSR UDC 591.105.56-13-42

AYRUMYAN, V. A., and BABINA, E. YA., Yerevan Zoological and Veterinary Institute

"Change of Lactic Acid in the Process of Maturation of Meat in Calves Treated with Chlorophos Solution"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 24, No 12, Dec 71, pp 100-101

Abstract: The treatment of calves with an 8% aqueous solution of chlorophos has an effect upon the quantity of lactic acid in the meat in the process of its maturation. In the meat of calves killed one and three days after chlorophos treatment, a maximum increase of the lactic acid content was noted twenty-four hours after slaughtering, more than double the amount 2-3 hours after slaughtering. However, on the 15th day of meat maturation, the quantity of lactic acid is considerably less than in the meat of intact calves and calves slaughtered 6 days after chlorophos treatment.

USSR

UDC 591.105.56-13-42

AYRUMYAN, V. A., and BABINA, E. YA., Yerevan Zooveterinary Institute

"Changes In Glycogen Level During Maturation of Meat of Bull-Calves Treated with a Chlorophos Solution"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 24, No 11, 1971, pp 111-112

Abstract: Bull-calves were treated with an 8% aqueous chlorophos solution (a compound used against ecto- and endoparasites), and slaughtered 1, 3, and 6 days later. Meat sections were analyzed for glycogen content after various periods of maturation. In the control group, glycogen concentration was about 700 mg% 2-3 hrs after slaughter and gradually decreased with increasing period of maturation to reach about 50 mg% on the 15th day. In animals slaughtered 24 hrs and 3 days after treatment, the initial glycogen concentration was about 2,000 mg%. Though it decreased with time, it was still two to five times as high as in controls on the 15th day of maturation. However, in animals slaughtered 6 days after treatment, the initial glycogen concentration was essentially the same as in the controls. During maturation, glycogen decomposition was delayed just slightly, to reduce glycogen concentration to about 70 mg% on the 15th day. It was concluded that 8% chlorophos decelerates conversion of glycogen into lactic acid but that this effect is of brief duration.

1/1

USSR

UDC 541.11:546.65

AFANAS'YEV, YU. A., KRAVCHENKO, L. KH., and BABINA, K. A., Institute of Inorganic Chemistry, Novosibirsk, Siberian Department Academy of Sciences USSR

"Thermochemistry of Anhydrous Double Selenates of Rare-Earth Elements of the Cerium Group and of Ammonium"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1622-1624

Abstract: The heats of solution ΔH_s of the double selenates $M_2(SeO_4)_3 \cdot (NH_4)_2SeO_4$ (M = La, Pr, Nd, Gd) were determined. The standard enthalpies of formation ΔH_f^o of these double salts in the anhydrous state were calculated from ΔH_s and the values of ΔH_f^o for $M_2(SeO_4)_3$ and $(NH_4)_2SeO_4$ in dilute aqueous solutions, which were taken from the literature. By the method of comparative calcualtion, the values of ΔH_f^o for the anhydrous salts $M_2(SeO_4)_3 (NH_4)_2SO_4$ (M = Ce III, Sm, Eu) were also determined. In calculations for the double salts of Sm and Eu, the relation ΔH_f^o (selenate) = 0.813 ΔH_f^o (sulfate) - 58.6 was applied, while ΔH_f^o for the anhydrous double Ce III selenate was determined on the basis of the linear relation between ΔH_f^o values for the anhydrous double

1/2

USSR

AFANAS'YEV, YU. A., et al., Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1622-1624

selenates and double selenates in dilute aqueous solutions. The temperatures (T_d) of decomposition of the double selenates of the rare-earth metals were lower by approximately 100° than those of the analogous double sulfates. The values of ΔH_s, ΔH_f^o, and T_d that were determined for the double selenates are listed in tables.

2/2

UDC 632.95

USSR

BABINA, Yu. K., KUCHEROVA, A. I.

"Methods of Determination of Chlorofos and DDVP in Technical Products"

Probl. analit. khimii [Problems of Analytic Chemistry -- Collection of Works], Vol 2, Moscow, Nauka Press, 1972, pp 14-17 Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N580, by T. A. Belyayeva)

Translation: A potentiometric method is suggested for determination of chlorofos (I) and impurities in technical products and a combined method is suggested for determination of the composition of technical DDVP, including potentiometric determination of I and spectrophotometric determination of the sum of I plus DDVP. Potentiometric determination of I and its impurities in technical products is performed in alcohol, the titrant is a 0.5 N solution of KOH in ethanol or a 0.5 N aqueous solution of NaOH. The sum of I plus DDVP is determined using their capability to stain complexes with acetone in an alkaline medium (λ(max) 370 mμ). The maximum stain is developed after two hours standing at 25°. To confirm the qualitative composition of technical I and DDVP, the method of TLC on SG in the $CHCl_3$-MeOH system (9:1) is used.

1/1

USSR

UDC 77

MAKAROV, N. V., GERASIMOVA, T. N., CHURAYEVA, A. M., BABINA, Z. N.

"Effect of Potassium Iodide on the Dispersion of a Photographic Emulsion and the Solubility of Silver Halide"

V sb. Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti (International Congress on Photographic Science, Moscow, 1970, Nature of Photographic Sensitivity -- Collection of Works), no place of publication given, Vneshtorgizdat, no year given, pp 309-312 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1345)

Translation: It is shown that the average area of the projection of AgBr(I) crystals of a photoemulsion of the ammonia type changes with an increase in the concentration of KBr similar to the change in the solubility of AgHal in the presence of I^- and NH_3 ions; a study of solubility therefore makes it possible to establish the change in dispersion of the emulsions. The solubility

1/2

USSR

MAKAROV, N. V., et al., Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti

Priroda fotogr. chuvstvitel'nosti, no place of publication given, Vneshtorgizdat, no year given, pp 309-312

curve of AgHal has a maximum, the shape, height, and position of which depend on the KI concentration, so that at the maximum the ratio of Br^- and I^- ion concentration is close to the ratio of the solubility products of AgBr and AgI. The formation of silver iodide complexes (Ag_3I^{2+}, AgI_2^-, $Ag_2I_4^{2-}$, etc.) effecting the solubility of AgHal in the presence of ammonia occurs only for a KI concentration above 0.1 mol/l, i.e., in the range of concentrations not applicable in the synthesis of emulsions. A. L. Kartuzhanskiy.

2/2

USSR

UDC 621.375.82

OBUKHOV, V. I., BABITSKAYA, E. M., GOYDENKO, P. P., and BUYKO, L. D.

"Lasers in Semiconductor Monitoring Systems"

Kvantovyye generatory v sistemakh kontrolya poluprovodnikov (cf. English above), Minsk, "Nauka i Tekhn." (Science and Technology), 1972, 120 pp, ill., 55 kopecks (from RZh-Fizika, No 8, Aug 72, Abstract No 8D1157K)

Translation: The book describes methods and principles for the formation of automatic systems through the use of lasers to monitor such semiconductor parameters as thickness of epitaxial film and resistivity, as well as parameters characterizing surface state. The authors take up the peculiarities of the interaction of electromagnetic laser radiation with the semiconductor (reflection, absorption, refraction) and the methods and principles on which the monitoring is based (interference, holography etc.). Bibliography with 87 titles.

1/1

USSR

UDC 661.143(088.8)

BABITSKAYA, R. A., GORODINA, Z. F., ZYTNER, G. G., KOROVICHEVA, V. R., MARKOVSKIY, L. YA.

"Procedure for Obtaining a Luminescent Compound"

USSR Author's Certificate No 312864, filed 18 Aug 69, published 2 Dec 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L187P)

Translation: In order to reduce the cost and to obtain luminescent compounds which are efficient with respect to brightness of their luminescence, a group III metal orthovanadate and orthophosphate are used in combination with mixed group II metal orthovanadate and orthophosphate. Various rare-earth elements or a mixture of a rare-earth element and Bi is used as the activator. The activator and Bi are taken in the amount of 0.01-0.2 g/atom per mole of final product. The luminous compound obtained by the proposed procedure corresponds, for example, to the formula: $Me_{(3-1.5x)}^{2+}Me_x^{3+}(P_{1-y}K_yO_4)_2 \cdot zA$ where Me^{2+} are Ca^{2+} or Sr^{2+} ions with partial replacement by Zn^{2+} or Mg^{2+} ions; the Me^{3+} are Y^{3+} or La^{3+} or Al^{3+} ions; K is a group V element of the periodic system, for example, V; A are the activator ions Sn^{2+} or Eu^{3+} or Sm^{3+} or combined with a sensitizer, for example, Bi; $0.05 \leq x \leq 0.5$; $0 \leq y \leq 0.5$; $0.01 \leq z \leq 0.2$. In order to obtain the compound, the charge components are

1/2

USSR

BABITSKAYA, R. A., et al., USSR Author's Certificate No 312864, filed 18 Aug 69, published 2 Dec 71

mixed in advance and baked in the air or (in the case of using Sn^{2+}) in the presence of a reducing agent at a temperature of 600-1,200° for 2-4 hours. The luminescent compounds obtained are excited by a broad range of UV radiation.

2/2

USSR

UDC 620.193.5

SOROKIN, YU. I., TSEYTLIN, KH. L., VALASHOVA, A. A., BABITSKAYA, S. M., LEVIN, YA. S., Scientific-Research Institute of Organic Semi-Products and Dyes

"Influence of Water Vapor and Its Mixtures With Carbon Dioxide on Corrosion of Metals in Ammonia at 500°"

Moscow, Zashchita Metallov, No 4, 1972, pp 430-434

Abstract: It was shown earlier that the catalytic action of metals on dissociation of ammonia and their corrosion resistance are interrelated. It was therefore of interest to determine the influence of water vapor and its mixtures with CO_2 on the resistance of metals to a stream of gaseous ammonia. The addition of water vapor has little influence on corrosion losses of carbon steel, but its mechanical properties change significantly, specimens breaking at bending angles of 30° after 400 hours (as opposed to 90° in pure ammonia). Water vapor sharply reduces the corrosion of stainless steel. The strength properties of the steel change little. The addition of carbon dioxide with water vapor sharply increases total corrosion of carbon steel. The strength properties change slightly, but cracks appear at bending angles of 90°.

1/1